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ABSTRACT

The nine brief articles composing this report focus on several aspects of overpopulation and related problems. The first article discusses needs of third-world children in the last quarter of the twentieth century. The second discusses the importance of "childspacing," major health risks of excessive births, breastfeeding for birth spacing, and the need for more and better family planning. The third article briefly points out consequences of unwanted childbearing, emphasizing that every unwanted child is a threat to society 15 or 20 years down the road. Family disintegration in Latin America and its consequences for children are described in the fourth article. The fifth article reports findings of the Sudan Fertility Survey, focusing on how infant mortality affects reproductive behavior. The sixth and seventh articles briefly explore, respectively, the value and cost of children in changing societies, and family size and child development. Sex preference and its effect on family size and child welfare are briefly discussed in the eighth article; consequences of early childbearing are indicated in the ninth. (RH)

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Children: The Right To Be Wanted

William H. Draper, Jr.
1894-1974

The Draper Fund of the Population Crisis Committee

The Draper Fund was established within the Population Crisis Committee in 1975 to honor PCC's principal founder, the late General William H. Draper, Jr. Contributions to the Fund are used by PCC to encourage and expand those critical activities which promise the greatest impact in slowing world population growth. The funds are directed to responsible organizations with overseas staff for key action projects which cannot be initiated without private sector support. Among such agencies is the International Planned Parenthood Federation with member affiliates in 95 countries. In 1975, PCC established the Special Projects Fund to serve selected large donors who wish 100 percent of their contribution directed to specifically designated projects.

In the five years 1975 through 1979, the Population Crisis Committee and the Draper Fund have met their original goal by raising total revenues of over $10 million.

Although in the long run major new commitments from governments will be needed to solve national population problems, the role of the private sector remains indispensable. Non-governmental organizations, utilizing worldwide networks of volunteers, represent a vital and constructive force in influencing how soon and how soundly governments move. As General Draper often pointed out, contributions to such organizations can "do more good, dollar for dollar, than any similar amount employed in any other way."

Fred O. Pinkham
President

Robin Chandler Duke
Co-Chairman

The Draper Fund Report

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Children in Dark Times

A Year of Silent Emergency

James P. Grant
Executive Director,
United Nations Children's Fund
(UNICEF)

Far from being priceless, a child's life was worth less than $100 in 1981.

Wisely spent on each of the poorest 500 million mothers and young children in the world, such a sum could have bought improved diets and easier pregnancies, elementary education and basic health care, safer sanitation and more water. In other words, it could have brought the basics of life. And at the same time as meeting the most pressing human need in the world today, it could have helped to slow down population growth and accelerate economic growth in the world of tomorrow. In short, meeting the needs of all the world's children was both the greatest of humanitarian challenges and the best of investment opportunities.

In practice, it proved too high a price for the world community to pay. And so, every two seconds of 1981, a child paid that price with its life.

About those 17 million children who died during the year, there is little more to be said. Not 10 percent of them were immunized against the six most common and dangerous diseases of childhood. The cost of so immunizing all of the Third World's infants works out at approximately $5 per child. The cost of not doing so works out at approximately 5 million deaths a year.

For the children of 1982, the facts of life on earth will not be significantly different. Of the 125 million who will be born, another 17 million will be dead before their fifth birthday. To the extent that this annual decimation of the world's newborn is a reprisal for the failings of economic development, the immediate future holds little hope of a reprieve.

For most oil-importing developing nations, where the vast majority of the poor now live, economic growth has stalled and fallen to its lowest level in a decade. Hardest hit are the already poorest nations of Africa and South Asia where some nations are actually facing a reversal of development. It is here that most of the world's 'absolute poverty' is to be found. And it is here that over three-quarters of 1981's infant deaths have occurred.

South of the Sahara, 1981 was also the tenth successive year of declining food production per head and a total of 34 nations containing 260 million people are now reporting acute food shortages. Most at risk, as is always the case when malnutrition tightens its grip, are the growing minds and bodies of Africa's children. Compounding that risk in 1981 has been the unstaunched flow of Africa's refugees and displaced peoples. There are now over 6 million refugees, and almost half of them are children.

This has been, therefore, another year of 'quiet emergency': of 40,000 children quietly dying each day; of 100 million children quietly going to sleep hungry at night; of ten million children quietly becoming disabled in mind or body; of 200 million six-to-eleven year olds quietly watching other children go to school; of one-fifth of the world's people quietly struggling for life itself. But it has also been a year in which economic trends indicate that progress against such poverty is not only slowing down in many nations, but being thrown into reverse. Only two years ago, the World Bank reported that the total number of people living in absolute poverty was 780 million. Optimistically, said the Bank at that time, that number would fall to 720 million by the end of the 1980's. Pessimistically, it would rise to 800 million during the decade.

The Slowing of Progress

The Third World's infant mortality rate—that sensitive indicator of the well-being of mothers and children—fell by a steady four or five points a year in the 1960's. For the past five years, it has barely flickered. Average life expectancy, which increased by seven or eight months a year in the 1960's and early 1970's, is now increasing by only two or three months a year. School enrollment rates, which rose by a regular 4 or 5 percent a year up to the mid-1970's, now seem to have reached a plateau.

The developing world's infant mortality is still 10 times higher than that of the industrialized world, its life expectancy is still 15 years less, and a third of its six-to-eleven year olds are still out of school. In short, the optimism of the 1960's which gave ground to the realism of the 1970's has now receded even further to make room for the doubt and pessimism which seems to be settling into the 1980's. It is a process of disillusionment both aggravated and symbolized by the decline in the share of the world's wealth which has been invested in aid.

The needs of the world's largest generation of children—most of them born in the poorest countries—must be given priority, especially now

Not in a generation have expectations of world development, and hopes for an end to life-denying mass poverty, been at such a low ebb. In such a context, to advocate the rapid acceleration of development progress for the world's poorest billion people in order to significantly improve the lives of their children by the end of this century is to invite the charge of naivety.

It is a 'naivety' which UNICEF intends to pursue with the utmost vigor. Working with communities and families to provide for the health and education of their children is not only a matter of justice. It is also a productive investment in the world's economic and social future.

'Realism' and Meeting Children's Needs

The realism or naivety of any goal is almost always as much a question of priorities as of possibilities. And it is not the possibility of achieving primary health care and primary education for the great majority of children which is in question. It is its priority.

In dark times, children need priority. And while there will always be emotion behind that statement, it is also an appeal to reason.

More specifically, it is an appeal to two reasons—one of which is timeless and one of which is particular to this, the last quarter of the twentieth century.

Ninety percent of the growth of the human brain and 50 percent of the growth of the human body occurs in the first five years of the human life. The corresponding susceptibility of those years should alone argue that priority be given—in family affairs and in world affairs—to the needs of the young.

Usually it is the parents who are empowered to protect and provide. But if parents are deprived of that power, then the responsibility falls to the community of which the child is part. That special relationship of responsibility to its children is still an indispensable ethic of civilization. Indeed it is an increasingly relevant ethic as science and technology increasingly invest the earth with the attributes of a global village. And in this century there has been a growing recognition that if a local community is unable to meet the needs of its children then the responsibility extends to the national and international community.

In 'loud' emergencies, such as starvation in Kampuchea, the world community does respond, often magnificently. But in 'silent' emergencies—the more dispersed and less dramatic toll of hunger and illness and child deaths which add up to a Kampuchea every few weeks—the international response is also more muted. Like an echo of the paradox, the traditional cry of 'women and children first' applies only to such 'loud' emergencies as

fire and shipwreck. But in the silent emergencies of everyday need, the reality is usually 'women and children last.'

The Largest Generation

This timeless concern is today sharpened to a particular edge by specific changes in the growth and structure of world population.

After a rapid increase in the rate of population growth—caused by relatively sudden successes in controlling certain diseases, epidemics and famines which meant that more infants survived to have children of their own—fertility rates have now begun to fall in almost every region of the world. The begining of this decline is as unprecedented as was the surging increase which preceded it. Taken together, both forces now have a special bearing on the state of the world's children.

One effect is that 40 percent of the developing world's people are under the age of 15 and about to enter their childbearing years. As birthrates fall, the numbers of children as a proportion of the total population will also fall. But in our time, the Third World's ratio of younger to older—of dependents to providers—is at its height. In Germany or the U.S.S.R., for example, there are now two people of working age for every one who is too young or too old to work. In Bangladesh or Mexico or Nigeria, the ratio is one to one.

The result is a temporary but powerful extra strain on the Third World's capacity to provide for its children. In education, for example, those of primary school age now amount to 25 percent of the population. In the industrialized world, the corresponding figure is 15 percent.

The decline in fertility which is just beginning to become visible will in time lower that proportion. But meanwhile the capacity of the Third World to provide essential services for the young is stretched to the limit—and beyond—by quantitative pressures on low-income countries which leave little room for the qualitative improvements which are required to improve the well-being of the world's children.

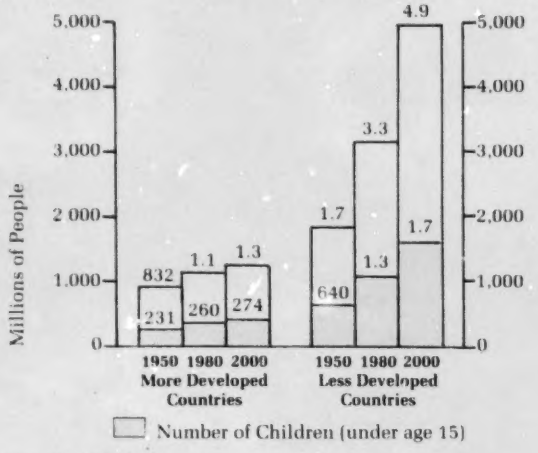
When these internal pressures coincide, as is now happening, with external economic pressures resulting from worldwide recession, then the welfare of the largest generation of children in history is further squeezed.

As nutrition, health, education and the normalcies of childhood are usually preconditions of successful parenthood, it is vital to both this generation and the next that the children of today be protected against the present economic weather.

The welfare of children—and future parents—is not the only issue at stake. For the question of whether or not improvements in the lives of the young are brought about

Forty percent of the developing world's population are children, who must be fed and educated despite the steadily worsening economy.

World Population and Number of Children (under age 15)

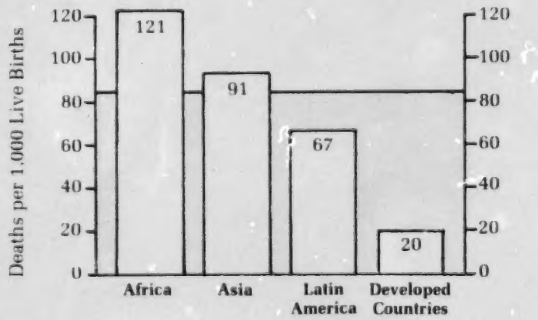


Source: United Nations

in the 1980's is also crucial to the slowing down of population growth itself.

Acceptance of family planning and a decline in birthrates is closely connected with such changes as the improvement of health care, the decline of infant mortality, and the spread of education (especially for girls). A setback in progress towards these social goals is, therefore, likely to also be a setback in the trend towards lower

Infant Mortality Rates by Region: 1982



Worldwide infant mortality rate: 85

The infant mortality rate represents the number of deaths annually to infants under one year of age per 1,000 live births.

Source: Population Reference Bureau

population growth—so increasing the numbers of children in future generations at the same time as decreasing their parents' capacity to provide for them.

Conversely, the stepping-up of national and international efforts to meet such needs would have the opposite effects of improving life for the children of today, investing in their capacity as the parents of tomorrow, and creating the conditions necessary for a further slow-down in population growth itself. Extrapolating the experience of those developing countries which have lowered death rates, for example, suggests that the very same improvements in human welfare which would be required to reduce infant mortality could also result in 12 to 20 million fewer births each year.

The commonly held view that reducing infant mortality only stores up more births and more trouble for the future is a mistaken one. Meeting basic human needs is necessary not only to prevent human suffering in the present, but also to reduce the growth of population itself, thereby avoiding more human suffering in the future. Whether today's world population of 4.5 billion eventually stabilizes at 10 to 11 billion or 13 to 14 billion sometime around the end of the next century depends heavily on what happens to birthrates in the next two decades.

Present and future needs, therefore, cry out with one voice. And each decade into that future will see a magnification of either the successes or the failures of the world community's response to the needs of the present times.

This choice between compound failure and compound success is made the more crucial by the numbers involved. We can allow the largest generation of children to grow up malnourished, unhealthy and uneducated in order to become the parents of another generation of malnourished, unhealthy and uneducated children. Or we can accord to our children the priority they deserve by increasing efforts and resources to a maximum, rather than a minimum, at this time when such a large proportion of the world is young. Paradoxically, the present sees the future at its most vulnerable.

In sum, bringing about a significant improvement in the lives of children by the end of this century will certainly need a significant increase in the resources available for the task and in the effectiveness with which they are deployed. But it is a question of priorities not possibilities. It is a matter of choice in which both reason and emotion argue for children. And it is a crucial moment at which to decide. For between the vicious and the virtuous spiral, a choice must now be made. □

This article is excerpted by permission from The State of the World's Children, 1981-82, *published by the United Nations Children's Fund (UNICEF).*

Childspacing and Child Health

by Pramilla Senanayake M.B.B.S., D.T.P.H., Ph.D., F.R.S.H.
Medical Director, International Planned Parenthood Federation

We are all too familiar with slogans such as "our children are our heritage" and "every child a wanted child." Yet how many are aware that this year five million children worldwide will die from six major preventable infectious diseases? . . . that 250 million children are undernourished? . . . or that over 200 million school-age children are without schooling, and a similar number are refugees? Forty percent of the world's children have no access to safe water or effective medical care, and 30 percent are without adequate housing. Over a quarter of all children live in countries where the average per capita income is under $200 (U.S.) annually.

The welfare of children must become a global priority so that their plight can be resolved immediately—an undertaking that would require less capital than the industrialized world spends each year on cigarettes or alcohol. If 10 percent of the annual global investment in armaments could be redirected to help these children, their future would be far brighter. The statistics might be depressing, but they do put into perspective some of the choices available to the world community.

An adequate supply of water, improved environmental sanitation and nutritious food are by themselves insufficient for attaining complete physical and mental health and social well-being. More and more evidence is pointing to another component of preventive health strategies: family planning. Family planning allows parents to space the births of their children, ensuring a better future for the children of today as well as for the children of tomorrow.

Childspacing—the deliberate decision not to leave childbearing to chance—benefits both maternal and child health. The links between birth spacing and child health are clearly demonstrated in the following quotation by James P. Grant, Executive Director of the United Nations Children's Fund (UNICEF):

> Female literacy catalyzes family planning programs; less frequent pregnancies improves maternal and child health; improved health makes the most of pre-school or primary education; education can increase incomes and agricultural productivity; better incomes or better food reduces infant mortality; fewer child deaths tend to lead to fewer births; smaller families improve maternal health; healthy mothers have healthier babies; healthier babies demand more attention; stimulation helps mental growth; more alert children do better at school . . . and so it continues in an endless pattern of either mutually reinforcing or mutually retarding relationships which can minimize or multiply the benefits of any given input.

The Importance of Childspacing

Because her fertile life span is limited, each woman must balance the number and timing of her pregnancies with her age and health requirements in order to assure her children's safety and maximum probability of health. The emotional and physical costs of reproduction for the individual woman, as well as the drain on her family's resources, have been known for a long time, but only in recent years has a fuller analysis become available.

The major biological variables affecting the life and health of mother and child are straightforward: maternal age, pregnancy interval and number of previous pregnancies. Socio-economic indices such as nutrition and environmental factors further influence the results of pregnancy, including the risk of death or complications at delivery for both mothers and babies. Altogether, these elements affect even long-term developments, to the extent of causing differences in the intellectual performance of the offspring.

Pregnancy complications are still a major cause of death among women in some developing countries. Women are at increased risk if they have already borne three or more children, are under 20 years old or are over 35 years old. One of the main benefits of family planning is that it enables women to avoid high-risk pregnancies, and thereby improves the health of women by making it possible for them to have children when they are physically and mentally best prepared.

Many women in developing countries are either pregnant or breastfeeding during most of their reproductive years. Consequently, their bodies do not have time to

Childspacing with modern family planning methods can help ensure healthier mothers and children and avoid high-risk pregnancies.

recover from the strain caused by pregnancy, childbirth and breastfeeding. Their often inadequate diet fails to replenish stores of vital nutrients. The ability to space their pregnancies can relieve women from this debilitating cycle and help them regain health and strength after childbirth. This will leave them better prepared for a subsequent, planned pregnancy which will, in turn, have a better chance of a successful outcome.

Uncontrolled fertility also manifests itself in maternal mortality statistics, since maternal deaths increase with birth order. The incidence of complications of pregnancy and childbirth rises sharply after the third birth. Other complications that are more likely to occur as the number of pregnancies increases include problems with the placenta and umbilical cord, damage to the uterus, abnormal birth position of the fetus, and anemia. In addition to contributing to many deaths, these complications weaken and injure women. The debilitating effect of anemia, which makes sufferers more vulnerable to diseases and infections, illustrates the indirect impact of excessive pregnancies on women's health.

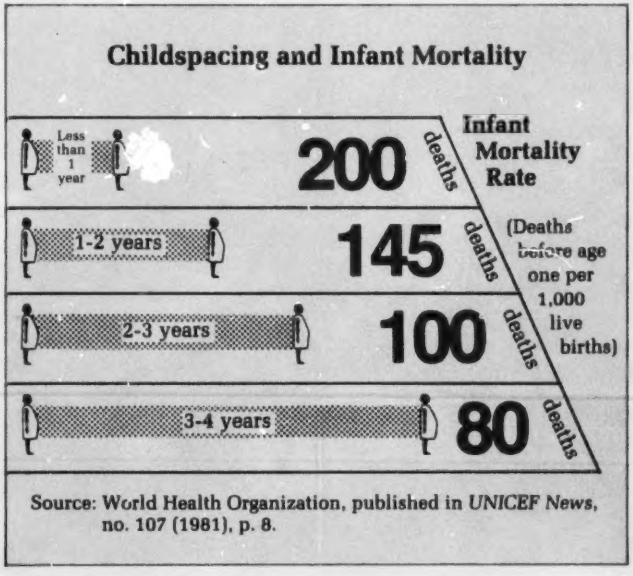
Childspacing is designed to avoid unwanted pregnancies, so any assessment of its value as a preventive health measure must mention the results of inept and frequently illegal abortions, which often lead to psychological trauma, pain, a substantial risk of hemorrhage, and death. Worldwide successful family planning would greatly reduce this vast source of suffering.

Excessive Births and Major Health Risks

The best start in life a child can have is to be born to a healthy mother, as part of a loving family able to provide sufficient care and attention. Children suffer when they are born into a family that did not desire them or is too large to care for them adequately. Uncontrolled fertility impairs not only the health of women, but that of children as well. Studies show that the same three factors that impair women's health—insufficient spacing between births, many births, and mother's age (younger than 20 or older than 35)—constitute an increased risk to offspring. Children born into these circumstances are more likely to be stillborn or die in infancy, or to have their health and growth impaired.

The highest rate of fetal death seems to be among pregnancies that began less than one year after the end of the previous pregnancy, and the frequency of fetal deaths appears to increase with birth order. Even infants who survive the first few days of life appear to be at a disadvantage if their mothers have already had many pregnancies. Birth weight is an important indicator for the future health of children, as those born with low birth weight have a high risk of dying during their first year of life and are more likely to suffer from health problems if they survive. After the fourth birth, the proportion of low birth weight babies increases steadily. Family planning can substantially reduce this risk.

In many parts of the world, each subsequent child means less food for each person in the family. One of the most



persuasive arguments for childspacing is the inability of many families to feed several children adequately, and the ensuing malnutrition that this causes. Kwashiorkor—"the disease of the displaced child"—occurs when first children are weaned too early because of a subsequent pregnancy, making them much more susceptible to malnutrition and infection. The World Health Organization has assessed the interaction between large family size, short birth spacing and poor nutrition for children caught in this cycle:

> The incidence of diarrhoeal disease, the principal cause of death in less developed countries during the first two years of life, is clearly associated with poor weaning practices and early weaning often follows a short pregnancy interval. The ensuing malnutrition, which reaches its peak during the second year of life, is also related to the high incidence of other infectious diseases during this period. The health impact of spacing is assuming increasing importance in developing countries, where proscriptions on the early resumption of cohabitation are losing their force in many communities.

As might be expected, the same factors that affect children's health also seem to affect their development. Children in large families and those born close together suffer inferior growth and development, both physically and intellectually, compared with other children. The relationship between declining test scores and increasing family size has been vividly demonstrated in studies in many countries.

Breastfeeding for Birth Spacing

The beneficial effects of breastfeeding are well recognized. Specifically adapted to the needs of the human infant, breast milk provides both nutrition and defense against infection. The act of breastfeeding also ensures mother-child interaction, which is important for the emotional development of the child and is the basis of bonding between mother and child. Breastfeeding, which combines the provision of food with oral and skin-to-skin contact and physical warmth, promotes infant health in many important ways.

Breastfeeding provides yet another advantage: biological birth spacing, the result of maternal hormonal changes brought about by suckling. The contraceptive effect of breastfeeding has been an important regulator of human fertility since ancient times. The cessation of breastfeeding represents a hazard to the infant with respect to nutrition, growth and protection from infection. It may also contribute to maternal death by stimulating fertility, which in turn results in health risks to the infant and its siblings.

Children in large families and those born close together suffer inferior growth and development, both physically and intellectually.

In spite of the worldwide decline in the practice of breastfeeding, more births are prevented in most areas of the developing world by the contraceptive effects of breastfeeding than by any other method of contraception. Studies have shown that no more than 5 to 10 percent of women will conceive during lactational amenorrhea (cessation of menstruation), and then only in the few weeks immediately preceding the resumption of menstruation. This failure rate is no higher than the observed failure rate for oral contraceptives in many developing countries.

The contraceptive effects of breastfeeding can be illustrated by Bangladesh, where, if breastfeeding patterns were to change to those typical of industrialized countries, the already-high marital fertility rates would rise by over 50 percent. For fertility to be kept at current levels, there would need to be more than a fivefold increase in contraceptive use—from the present 9 percent to about 52 percent—to compensate for such low levels of breastfeeding.

More and Better Family Planning Needed

The infant mortality rate, which is a sensitive indicator of the well-being of mothers and children, fell a steady four or five points per year in Third World countries during the 1960's. For the past five years, however, it has remained static and at a level still 10 times higher than that of industrialized countries.

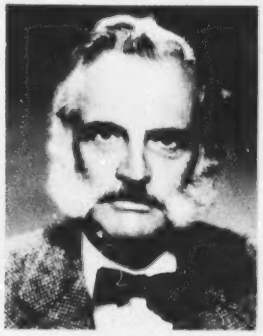
For more than half the world's couples, the fundamental decision of whether or when to have a child is not a decision at all, because family planning information or services have not been made available to them. Family planning programs must be expanded to meet universal demand and, at the same time, must be reviewed critically from the point of view of the community in which they operate. Each program should be adapted to meet the socio-cultural needs of the clients served.

While health risks are associated with both the lack of family planning and the use of existing contraceptive methods, the relative safety of contraception compared with childbearing has been well established for developed countries. It is highly likely that the risks of pregnancy compared with contraception are even greater in poorer countries, where the dangers of childbirth are so much greater. Many contraceptives, furthermore, have non-contraceptive benefits, such as the reduction of ectopic pregnancy and pelvic inflammatory disease for pill users and protection from sexually transmitted diseases for condom users.

It is doubtful that there will ever be a "perfect contraceptive," suitable for all couples throughout all stages of their reproductive lives. Further research is essential, of course, if existing methods are to be improved and new ones developed. But if high rates of community participation are to be achieved, sufficient attention must be focused on service delivery and on the needs and desires of individual couples.

Most of the children of today will be parents by the turn of this century. Their future lies in our hands. We should do as much as is humanly possible in our communities, in our nations and at an international level to make certain that the fate of the world's children is accorded a much higher priority in our social, economic and political affairs. □

The Unwanted Child



Miguel Trias, M.D.
Executive Director,
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de la Familia Colombiana
(Profamilia)

One of the most grievous aspects of the complex maze of negative factors associated with underdevelopment is the problem of the unwanted child. This distressing biological and cultural anomaly certainly exists in industrialized countries as well, but it is clear that the incidence of unwanted pregnancy is much less than in the Third World. In industrialized countries, modern contraceptives are widely available, public awareness of them is high, and legal abortion may be an option in the event of contraceptive failure or nonuse.

In Colombia—where the high level of contraceptive awareness stands in marked contrast to the nation's modest level of economic development—55 percent of all married women of childbearing age say that they do not want any more children, regardless of the number they already have. But closer analysis reveals, surprisingly, that half of these women do not practice birth control or, at best, use only the unreliable "traditional" methods. It is impossible to determine whether this discrepancy between attitude and behavior is the result of ignorance, fear or poverty, or a combination of all three.

In Colombia alone, nearly one million women are living in immediate danger of an unwanted pregnancy. In the Third World as a whole, there are an estimated 150 million women who do not wish to have another pregnancy but who lack access to contraceptive information and services. There is probably an equally large number of women who do not wish to become pregnant right now (although they may want a child sometime in the future). This tremen-

dous number of women creates the potential for an extremely large number of unwanted births.

The Consequences of Unwanted Childbearing

Unwanted childbearing has very far-reaching implications for individual children, their families, and society as a whole. It is a problem of major proportions in most societies, and yet most people fail to make the connection between unwanted childbearing and problems such as impaired physical and mental development of children, child abuse and neglect, and juvenile delinquency.

Research from a variety of sources suggests that being unwanted and unloved can have a lasting effect on a child's development. All experimental research conducted on monkeys and other primates indicates that if the close bond normally established between the mother and her infant is severed during the first few months of the infant's life, the infant will never develop into an emotionally or affectively normal adult.

Although human experiments of this type are impossible for obvious reasons, sociological research of every kind confirms the need to preserve the bond between mother and child, which is bound to last longer than in other primates because of the longer maturation period. The effort involved in teaching and learning language, an invaluable tool for transmitting culture, is another reason this bond lasts as long as it does. It is now believed that the psychological bond between mother and child is established in the womb, and that in the last three months of pregnancy the fetus in some way internalizes the changes in its environment. This includes feelings of affection or rejection from the mother which it picks up through sound, touch or via the bloodstream as a result of slight changes in hormonal substances.

Studies of adopted children have established a clear relationship between their physical and psychological development and the age at which they were adopted. If this affective bond is not established in the early months of life, the negative effects which result may prove difficult, if not impossible, to overcome, no matter how much affection the child subsequently receives. However late it comes, adoption is always preferable to the relative deprivation a child experiences when put in an institution. Despite recent negative publicity about Third World children "sold" to wealthy parents in rich countries, it is worth bearing in mind that it is infinitely better for children to find haven with parents who have sought them out than for them to live in the abandonment and loneliness which their own country offers them.

Studies conducted in Eastern Europe comparing children whose parents had requested an abortion, but had not been granted permission (for various reasons), with a control group of children revealed a pattern of inferior physical development and social adjustment in the first group. In the developing world, where most working mothers lack childcare facilities, it is common for them to leave their children home alone during the day. This involuntary abandonment leads to the well-known "box syndrome," so-named because the children stay cooped up all day inside a cardboard box, deprived of the basic tactile,

An estimated 150 million Third World women do not wish another pregnancy but lack access to contraceptive information and services.

visual and auditory stimuli so necessary for normal development of the nervous system.

The indefinable product known as intelligence, in addition to its important genetic foundation, requires physical nurturing and psychological stimulation from the surrounding environment, provided during the final months of pregnancy or the first few years of life. If it is withheld, the void that develops will, unfortunately, always remain. Inadequate communication with the mother, due either to the demands of work or to her inability to show affection, is a significant cause of impaired development.

Religious doctrine has postulated that universal maternal instinct allows mothers to overcome these problems. Unfortunately, this is often not the case and the conflict becomes so great that the mother may, with or without the consent of the father, resort to the tragic but expedient alternative of infanticide—a decision reached more frequently than is believed.

Infanticide dates back to the dawn of history, and primitive villages continue to observe rituals intended to appease the evil gods and, at the same time, control the population based on the number of people the land can sustain. Female infanticide occurs more frequently, however, as sons are preferred for religious and economic reasons.

The far-reaching changes that took place in Western Europe in the early stages of industrialization completely altered the status of the child, who in a rural setting had been useful to the family but who might be an inconvenience to the urban family unit. This development led to the proliferation of hospices and orphanages where infant mortality was so high that it was considered deferred infanticide. In England, it led to the custom of causing newborn babies to choke to death by giving them a spoonful of gin, then leaving them on the streets where, the next morning, the trash collectors would pick them up.

Fifty years ago, it became fashionable in industrialized countries to take newborn infants away from their mothers and place them in hospitals to prevent infection, a practice which has since been reconsidered. It was discovered that once the infants were isolated, there was a reduction in the rate of death by suffocation. The alleged cause of death had been accidental smothering brought about by a simple, inadvertent change in the sleeping position of the mother. A more careful analysis revealed a pattern of deliberate infanticide. Although it is once again the practice to keep mother and infant together so that the relationship which develops between them will not be interrupted, the high rate of infant death by smothering

Effective family planning helps reduce the incidence of child neglect, abuse and infanticide, the latter once common even in western countries.

has not resumed. Access to contraception and legalized abortion have minimized the occurrence of unwanted births, and thus of this form of infanticide.

Where effective family planning services are not available, there are unfortunately much more subtle and perhaps crueler ways of limiting family size. The well-documented phenomenon of the rising infant mortality rate relative to the birthrate cannot, in all cases, be attributed to the "maternal depletion syndrome." This syndrome describes the situation of the mother who, herself undernourished, has no reserves upon which to draw for the next pregnancy, which invariably comes too soon after the previous one. Even when statistics take maternal depletion syndrome into account, the number of infant deaths is unaccountably high.

At the same time, health care providers at emergency pediatric care units are aware that diligent parents who bring their first- and second-born children at the slightest sign of illness frequently become indifferent, or even negligent, when it comes to the younger children. These children might not be brought to the clinic until they are beyond help.

There is no doubt that the plight of the unwanted child causes both personal and societal suffering because of its seriousness and frequent occurrence. Were it clear that a tragic medical condition such as congenital heart disease could be easily prevented, but that no one was bothering to do it, we would be outraged. Yet this is precisely the case with the syndrome of the unwanted child.

We could drastically reduce the incidence of this medical and social tragedy by extending to all families the wide variety of modern contraceptives now available to the fortunate few, and by offering medical abortion services to those who want them. We must endeavor to make the well-known slogan which says that no child shall come into the world unwanted into a reality. All governments must be persuaded that making family planning available to everyone is not merely a basic human right, but a moral imperative of the highest priority.

Every unwanted child is not merely a problem but a threat to society 15 or 20 years down the road. Often physically abused and then perhaps abandoned to resort to juvenile delinquency or prostitution, the child may be viewed by the father as an economic burden and by the mother as a threat to her family's economic survival. The result is a crippled member of society, so marginalized that he or she can be absorbed by society only by detention, usually in asylums or prisons. This pathological pattern of development is more social than medical and is born of poverty, ignorance, overcrowding and advanced malnutrition... all caused by overpopulation. □

Family Disintegration in Latin America: The Consequences for Children

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Brazil, which has the sixth largest economy in the world, is now viewed by many as a prosperous middle-income country. Unfortunately, the country's veneer of prosperity—represented by a high rate of economic growth, a large, modern industrial sector and some of the most cosmopolitan cities in the world—obscures the real poverty of millions of Brazilian families whose situation has, if anything, been made worse by the swift economic and social currents sweeping Brazil into the modern technological age. Set adrift in a materialistic, mechanistic world which they neither understand nor control, these families at the bottom of Brazil's socio-economic ladder can no longer meet the most basic physical and emotional needs of their members. The disintegration of so many families, the basic building blocks of a sound society, has severe consequences for the large and growing segment of Brazil's young population.

In 1975 a federal study on children by Brazil's Chamber of Deputies concluded that some 25 million children—40 percent of the total population below the age of 18 years—could be classified as disadvantaged. By 1980 this figure was estimated by Justice Minister Abi-Achel to have grown by another 3 million. An estimated 11 million of the disadvantaged children were literally destitute and homeless, abandoned by their impoverished parents to a precarious existence on the streets of Brazil's major cities.

The parents of many such abandoned children are recent migrants from the rural areas, landless or with insufficient land to support themselves, attracted to the seeming abundance of schools, hospitals and jobs in the great urban

agglomerations. Most of these families soon discover that the bright attraction of city life is merely an illusion.

Too poor to partake of health and other services, unable to find adequate work and finally unable to meet their own needs for food, shelter and clothing, such families slip slowly into a state of destitution and disarray. Bereft of any other option, the children end up on the streets, where they are abused, exploited and drawn into lives of crime and violence. In Sao Paulo alone, Brazil's most highly industrialized and prosperous large city, there are 600,000 abandoned street children, existing from day to day on what they can earn, beg or steal. Thousands of such children come before the juvenile courts every year. A few can be helped; but for most the future pattern of their lives has already been determined by years of deprivation.

Abandoned children are not the only young victims of the imbalances in Brazilian society. Despite the country's economic miracle, perhaps as many as 80 percent of Brazil's children suffer from some degree of malnutrition, according to the World Health Organization. Furthermore, although medical services are highly sophisticated, infant mortality is still 84 deaths per 1,000 compared to an average of 12 per 1,000 for Western Europe. In the Western hemisphere, several countries with lower per capita incomes have made greater progress in reducing infant and child mortality.

Despite Brazil's recent economic prosperity, an estimated 11 million children have been abandoned and 14 million more live in poverty.

Growth, Development and the Family

These inconsistencies point up the fallacy of confusing economic growth with development. Economic growth, like the economic system itself, is quantitative, mechanical and materialistic. Development is organic and includes social dimensions, such as the population's educational, nutritional and health status. Development addresses the individual in the context of family and community, strengthening and integrating these three levels of society.

The problem of Brazil's millions of disadvantaged children is at its heart a problem of families and of the strains placed on families by rapid, disorienting changes in social, economic, political and cultural systems. The family is necessarily the major synthesizing institution in society, the intermediary between individual and community.

In traditional societies the family was strengthened by the fact that it was a unit of economic production. The extended family was also the center of education and instruction, recreation and social life as well as the repository of moral and spiritual values. Technological revolution has brought about the dispersal of the extended family as its members sought to compete in the open wage-labor market. The nuclear or conjugal family, no longer a unit of economic production, became instead a unit of consumption, a cog in the great machinery of economic growth. And so also began the search outside the family context for education, leisure and a new set of social norms to guide behavior.

This loss of the traditional functions of the family in the process of technological evolution has throughout modern history placed enormous strains on the family as the central institution for social integration. Today this historical tendency toward family disintegration is greatly aggravated throughout the countries of the Third and Fourth Worlds by three factors. First, the pace of economic and social change has become very rapid, breaking down traditional social institutions before new ones arise. Second, the benefits of economic growth are unevenly distributed, leaving the major part of the population living in anonymity and poverty. And third, continued high rates of unwanted fertility have consumed the resources of individual families and of society as a whole, further aggravating the gap between rich and poor. The result is that millions of families—most of them large families with many children—are incapable of solving their problems by their own efforts, and parents are unable to meet the most primary physical needs of their children. As a postulate of Family and Child Rights we judge the health of the family (its integration and the biological, social and psychological harmony of its members) by its ability to meet the physical and emotional needs of its members.

In most developing countries, the two most essential needs of children—adequate nutrition and schooling—are not met, principally because the majority of family incomes are too low. Considering the cost of food compared to the salary of the average worker, most families would have to spend between 45 and 70 percent of their income just to provide a minimally adequate diet. Given the family's other financial obligations (rent, electricity, taxes and other expenditures less easily deferred), expenditures on food may be less than needed to support the healthy growth and full development of a large number of children. It should not be surprising that, under these circumstances, desperate parents would abandon some of their children to fend for themselves or that even among children lucky enough to have secure homes, millions would not receive adequate food, health care and education.

Children Shape the Future

No nation which seeks to reach its full potential can afford to ignore the nutritional and educational needs of its children. Children who are helped to develop their full mental and physical capabilities are a major resource for the future. Conversely, children whose development is truncated by early deprivation may become a major drain on their societies as adults.

Mental retardation is only one of the possible serious consequences of childhood deprivation. It is closely related to malnutrition. A child at birth has 25 percent of its brain capacity; within only 15 days it has 50 percent, and by the time the child reaches the age of four it has 75 percent of all the brain capacity it will ever develop. Key in this process of development is the *encephalon*, the center for nerve cells which control not only intelligence, but also emotions and physical coordination. Developmental disabilities in this area, related to malnutrition, can therefore affect social behavior. The delayed effect of such mental retardation is a type of social deviation characterized by difficulty in adapting to the cultural values which govern social and intellectual behavior.

Childhood deprivation, including the extreme case of abandonment, has other serious consequences for the adult personality. By the age of six a child's adult personality is essentially formed, including any basic impulse to anti-social behavior. The process of family disintegration and marginalization, by which large numbers of children are deprived of physical and emotional support, leaves societies vulnerable to social illnesses of epidemic proportion in the future. As a consequence, governments are required to make massive investments in palliative and curative measures to treat the illness, whereas less expensive preventive measures might have assured social health.

There are today more children in the world, in both absolute and relative terms, than ever before in human history. As a result of high rates of population growth over the past two decades, the age structure of the world's population has changed dramatically. Half of all people alive today are below the age of 18 years. Large numbers of them are ill-fed, ill-housed, in poor health and illiterate.

The dimensions of child deprivation in Latin America (where conditions are significantly better than in many parts of Africa, Asia and the Middle East) were outlined in the report of a UNICEF meeting held in Mexico in 1979. Of the 133 million children up to 14 years old living in South America and the Caribbean, 55 percent survive miserably. Death claims 139 of them every hour, and some 1.2 million die every year, one million before they reach the age of four. Half have no schooling, no regular source of protein-rich foods, no reliable supply of potable water or access to basic sanitation and no maternal-child health care. One in ten children, shadowed by chronic famine, is the victim of some degree of mental or physical deficiency. Out of every five children now housed in a state institution, one will remain institutionalized for life, a victim of parental abandonment.

As Dr. Luis Carlos Raya, the eminent pediatrician, has said, growing children, like all the earth's creatures, need

Many Third World parents cannot afford to provide the two most essential needs of their children: adequate nutrition and education.

to feel accepted and wanted by others if they are to learn to accept the social environment and show compassion toward other beings. The condition of the delinquent minor who comes before the juvenile court cannot be disassociated from the broader society and from the unsettling social, economic and cultural trends which marginalize and disrupt families.

The Search for Solutions

The grave problems which beset countries today—the demographic explosion, massive urbanization, migration, inflation, economic recession and stagnation, increased social stratification—have caused deep distortions in the societies of the Third and Fourth Worlds. Cause and effect cannot be ignored. Freud once said that for each step of progress one must pay a price in new frustrations, anxieties and tensions. One may ask whether the price of the technological revolution now sweeping the developing world is too high. Does it include the widespread dissolution of the family as an effective social and economic institution and a life of anomic misery for hundreds of millions of children?

The complex problems that afflict Latin American countries have no short- or medium-term solution, but some steps would strengthen the socio-familial system:

- The countries of the developed and developing worlds must achieve a higher level of cooperation aimed at correcting the distortions and deficiencies in the present international order and at arresting the tendency of countries at different levels of economic development to drift apart.
- Every country should establish a special agency (such as a Ministry for Children and the Family) to assure the survival of the family as society's basic building block. This agency should promote, among other programs, family planning and responsible parenthood; maternal and child health care; complete birth registration; quality primary education which integrates the school, child and family; and school nutrition programs.
- Countries undergoing rapid urbanization should institute programs of rural development to curb migration to large urban centers, where social pathologies multiply, and should provide incentives for young families and adolescents to return to agricultural areas.

Finally, the world community cannot delay the development of a national and international conscience based on sound ethical principles, which will dignify individuals and uphold the moral traditions of the family. A new generation is rising. It is time for deep reflection about the kind of world in which this next generation will live. □

The Effect of Infant Mortality on Reproductive Behavior: The Experience of the Sudan

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In developing countries, deaths to infants constitute the single largest age category of mortality. Although recent decades have witnessed declines in infant and child mortality (as a result of the importation of medical technology and improvements in environmental sanitation and personal hygiene), a wide range of variation still exists among countries and between groups within a country.

Findings from a recent comparative study using World Fertility Survey data have shown that during the period of 1970-1974, infant mortality ranged from a relatively low rate of 34 infant deaths per 1,000 live births in Panama to a high of 135 deaths per 1,000 live births in Bangladesh. Such differentials in infant mortality are partially explained by the differing socio-economic, demographic and cultural characteristics among developing countries as well as by differences in health care. Knowledge of differentials in infant mortality among various groups of the population is an important step in the formulation of programs and policies designed to improve the survival and health of infants. Moreover, infant mortality seems to have an effect on the reproductive behavior of families.

Infant Mortality Affects Fertility

The effect of infant and child mortality on fertility behavior and attitudes is considered one of the most important areas of policy-oriented population research in today's developing countries. Some scholars suggest that one of the necessary conditions for the transition from high to low levels of fertility is a substantial decline in infant mortality. A World Health Organization report states that a

minimal level of health seems to be necessary for a family to realize that it can regulate its ultimate size.

Infant mortality may influence fertility through several effects. The most important may be the "physiological" or "biological" effect. The death of a child that is being breastfed terminates the mother's lactation prematurely, and this may reduce her postpartum period, a time when she is unlikely to ovulate. The longer her child lives and is breastfed, the more time will lapse between her pregnancies.

The "behavioral" or "child replacement" effect involves a deliberate decision by couples to compensate for dead children. In other words, couples continue bearing children until they replace the ones who died at a young age. The "child replacement" effect, therefore, makes sense only when couples practice some form of birth control to limit their fertility after they reach the number of children they want. Otherwise, reproduction will continue until the couple becomes unable to reproduce or until the marriage is dissolved, regardless of how many of their children may have died.

Finally, the "insurance effect" assumes that couples adjust their fertility because they expect some of their children to die. Therefore, couples increase the number of their children to ensure the survival of the minimum number of children desired. The insurance effect depends on the perceived infant mortality level of the community in which the couples live. The "biological" and the "behavioral" effects, on the other hand, depend on the experience of couples with their own children.

Fertility Affects Infant Mortality

The reverse mortality-fertility relationship has also been an important area of policy-oriented population research. The adverse consequences of excessively high fertility on child health and mortality are well documented. Studies have shown that family size is highly correlated with the incidence of disease and malnutrition: children from larger families are more likely to be malnourished than those from smaller families. Evidence from developed as well as developing countries concerning the association between family size and infant mortality indicates that the infant mortality rate tends to increase as family size increases. Family size is not, of course, the only cause of high rates of infant death and illness, but it is clearly one of the most important.

The Sudan Fertility Survey data reveals that the infant mortality rate in the Sudan is very high compared with that of many developing countries. During 1974-1978, there were 104 and 88 infant deaths per 1,000 live births for males and females respectively (these rates are adjusted for age misreporting). Closer analysis of the rates, however, shows substantial variation by demographic and socio-economic factors. The education of the father and mother and the working status of the mother, for example, have a strong association with infant mortality. Subgroups of the population that enjoy high socio-economic status tend to maintain a relatively low level of infant mortality. A higher incidence of infant deaths occurs among illiterate parents and among working mothers, the majority of whom are involved in agricultural activities. The high infant mortality rate for working mothers suggests an urgent need for childcare facilities.

Indications of Reproductive Health by Region: 1982

	Africa	Asia	Latin America	More Developed Countries
Crude Birthrate (Number of births per 1,000 population)	46	30	32	15
Total Fertility Rate (Average number of children per woman)	6.5	4.2	4.4	2.0
Infant Mortality Rate (Number of deaths under 1 year of age per 1,000 live births)	121	91	67	20

Source: Population Reference Bureau

Among the demographic variables, the age of the mother, the child's birth order and the interval between births strongly influence the child's chances of survival. Infants of very young mothers (under the age of 20) and of older women (over the age of 35), as well as those born shortly after a previous pregnancy, are at a much higher risk of death. This finding has implications for population policy programs, since the use of contraception for the purpose of spacing births may lead to a substantial reduction in early childhood mortality.

The investigation further revealed that the death of an infant reduces the birth interval significantly—by a minimum of six months. In other words, a woman whose infant has died will conceive again at least six months earlier than she might otherwise have been expected to. This difference in the length of birth interval appears to be primarily a result of the interruption of lactation. Changes in lactational behavior, therefore, can have significant impact on fertility, unless these changes are accompanied by contraceptive use.

In the case of the Sudan, the "child replacement" effect seems to be less significant, as Sudanese women tend to under-replace children lost due to death. This finding is consistent with the low level of contraceptive use; only

about 12 percent of Sudanese women reported ever having used contraception, and 5 percent were current users. Under-replacement means that when infant mortality is reduced, the death rate for children will be reduced more than the fertility rate, more children will reach adulthood, and the population will therefore grow at a faster rate. In the case of the Sudan, then, programs designed to reduce infant mortality as a means of reducing fertility may not have the desired effect.

Meeting the Need for Family Planning

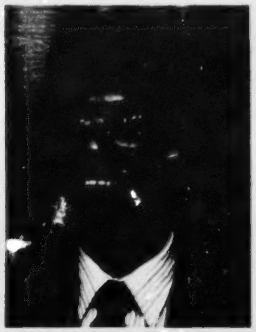
Improvements in maternal and child health care programs along with organized family planning programs may nonetheless be a sound population policy for the Sudan. The 1978 Sudan Fertility Survey, which scrutinized family size preference and contraceptive use, revealed that 17 percent of the women questioned wished to end childbearing but were making no active effort to do so. Intensified family planning efforts integrated into maternal and child health programs would quite naturally be addressed to the needs of this group.

African governments are increasingly recognizing the important contribution that family planning can make to the improved health of infants and children. As family planning programs increase their outreach, it is hoped that the incidence of infant mortality and unwanted childbearing will decline.

National fertility data from several African countries indicate that a large proportion of women do not want to have additional children. For these women, breastfeeding is not a solution because it only postpones a subsequent pregnancy. Therefore, contraception can play an important role in limiting fertility, and there is strong evidence that it is desired and needed by many African women. □

In early 1982 a national conference on Sudan's population issues was held in Khartoum, attended by over 300 representatives of the national government, public and private research groups and international organizations. The Sudanese government has accepted the conference proposals as the basis of a national population policy. The conference recommended that family planning be expanded to cover all areas of the country, emphasizing the Sudanese goals of childspacing and improved maternal and child health; that demographic data be incorporated in development planning; and that an official National Population Council be established to study Sudanese population issues, to contribute to integrated population and development planning, and to take the lead in implementing population policies.

The Value and Cost of Children in Changing Societies



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People are attracted to having children for many different reasons. Babies, like the young of many animals, are distinctive visually, and experimenters report that people's eyes open wider when looking at pictures of babies than when looking at pictures of adults. There may be deep-seated biological reasons for wanting children; there certainly are many social and psychological reasons, and in some communities economic reasons as well.

However, there are also significant costs to having children. In attempts by social scientists to assess personal and marital satisfaction, couples are sometimes asked directly how "happy" they are. Especially in urban areas, couples with children often report that they are less happy than couples without children, and the more children they have the less happy they are. Considerable tension is generated by this opposition between the important values that children, and often only children, can provide and the considerable costs that parents bear in having them.

Values and costs must be balanced not only by parents but by communities and societies as well. Communities and societies will bear many of the costs of children (the need for schools, housing, jobs, etc.) and therefore have an important stake in the decisions couples make about family size. Governments need to better understand the considerations that enter such decisions if they are to exert any influence on them.

Though there is a great variety of possible values attached to children, six major values cover most of those cited in a major cross-national study that included several thou-

sand interviews in both developing and developed countries:

- Children provide economic assistance, often assisting with work on the farm and in the house when young and contributing to the household as adults. They also provide security against emergencies, and parents often expect to depend on them in old age.
- The continuity of the family depends on children. They carry on the family name and perpetuate family traditions, thus providing some form of immortality to older generations.
- For social reasons, it is important to have children. Without them, one may be considered a little strange and not fully adult, or may be unable to participate fully in religious ceremonies or social functions.
- Children are companions for their parents and a source of affection. It is important to have children whom one can love and be loved by in return. They bring a unique outlook, excitement and fun into a family and distract parents from work and other worries.
- The bond between husband and wife may be cemented by children, who may bring the spouses closer together.
- Children satisfy a variety of psychological motives: they allow a parent to relive his or her childhood vicariously, present a challenge to parents' skills in childrearing, offer an opportunity to exercise power over another, provide a source of pride in the future, and motivate parents to work harder and to behave more responsibly. Bearing and rearing children may also give a woman a sense of fulfillment in her life.

The importance of these values differs among societies and cultures, as illustrated by the value of carrying on the family name. This value is usually more important in relation to sons than daughters; other values, such as companionship and housework, are generally emphasized for daughters. Men usually give slightly more importance to carrying on the family name than women, though men and women in most societies typically agree on what values are important.

An Investment in Children

Economic values in particular have attracted the attention of researchers. The idea of having children because of the economic contributions they can make may seem strange to urban parents faced with the considerable costs of feeding, clothing, educating, medicating and entertaining children. But it is a common consideration among rural families in many developing countries, where children start as young as six years old to help parents in the fields and in the house. Chores such as tending livestock, collecting firewood, and caring for younger children are com-

Parents' perceptions of the values and costs of children have been changing rapidly throughout the developed and developing world.

monly assigned to youngsters. A twelve-year-old boy in a Bangladesh village, it has been estimated, is already a net producer: his labor contributes more to the household than he consumes. In one Nepalese village, boys aged six to eight worked an average of 3.7 hours daily, while boys aged nine to eleven worked 7.5 hours daily. Girls worked slightly longer hours.

Even in a peasant setting, where children contribute greatly to the household, the costs of childrearing may outweigh these contributions.

Such figures indicate that children could be economic assets in rural areas if parents could keep them working for the household long enough, but this is increasingly difficult to do. In order to repay the investment in him, a son must continue working for the household until his twenties. A study in Sri Lanka found that boys do not return the equivalent of what has been spent on them until they are close to the age of 30. All in all, some analysts have concluded, the average child costs its parents more than the child produces, even in a peasant setting.

When children go to school, there is less time to spend in the fields or on household chores. Furthermore, once they have been to school, even if only for a few grades, they are also less likely to go back to the work they used to do. Young people prefer idleness while they seek employment appropriate for their education.

The actual costs of maintaining children may not be large in peasant settings, but relative to incomes these costs are considerable and extremely significant—they are generally the most-mentioned cost of children in developing countries. One Indian father laments: "I have five children and they consume so much food that at present I am half starved. They are like small snakes. They eat everything in the house. There is nothing worthwhile in having so many children." Not everyone is forced to penury in this manner, but the monetary costs are such that only the well-to-do are free from worry.

Some parents may expect to recoup their investment in children by receiving support from them in old age. Such expectations are very common in developing countries: 80 to 90 percent of survey respondents in countries like the Philippines, Turkey and Indonesia typically expect such support. (In the United States, by contrast, only about 10 percent of respondents expect support in old age.) However, the support aged parents actually receive may be considerably less than expectations.

Land, if it is available and if one can afford it, is generally a better investment than children. Older people may therefore face a difficult choice. Handing over land to their children is one way to ensure continued support, but it puts them in a position of dependency. If the parents try to hold on to their land, however, the children might seek their fortunes elsewhere and feel no obligation of continued support.

In addition to money, children consume parents' time, especially in their earliest years. Some of this time is taken away from employment, but much of it is lost sleep or lost leisure time. Increasingly, as a society develops, this time spent on children appears more valuable. If opportunities for women to work improve, it becomes harder to stay out of the labor market to raise children. As consumer goods become more available, and as more people migrate to the cities, other things one could do with one's time and money become increasingly attractive.

Values in Transition

These two trends—the decline in the economic assistance that children provide and the increasing sense among parents that children restrict their other activities—are two

major parts of what has been called the "transition in the value of children." This transition involves first, a liberation of children from toil, and second, a liberation of parents from too many children so that they can pursue their own interests. Such a transition generally accompanies the decline in birthrates which occurs with socio-economic development. These changes in the value of children are essential: couples will not have fewer children unless they perceive children less as assets than as drains on their own time and earnings.

Even when children are uneconomical, however, they continue to provide other psychological and social values to parents. These values also change in the course of the transition in the value of children, but they increase rather than decrease in importance. Parents in most societies studied seem to value the companionship of children, but there is somewhat more emphasis on such values in higher-income societies. Being close to the subsistence level concentrates a person's efforts on survival, to the detriment of finer sentiments having to do with children.

Many developing societies have not reached this stage in the transition in the value of children. It is important to determine, therefore, what causes the transition process and whether it can be accelerated.

A number of aspects of socio-economic development affect the economic contributions that children can make. Education has already been mentioned; compulsory education can take children out of the fields and force them into the classrooms, although inappropriate education might well make them unfit for the kinds of jobs that are available. Rising incomes may make the contributions of children less essential and may induce parents to invest more in child "quality." Rising incomes may also make consumer goods more available and attractive as substitutes for having children. Finally, urbanization gradually reduces the simple jobs that children can do under the direct supervision of their parents or relatives.

Apart from depending on such long-term processes to reduce the attractions of large families, it should be useful to increase the information available to parents so that they can better appreciate the benefits and costs of large and small families. Many values, after all, do not require large families for their attainment. One or two children, particularly if child mortality is low, are enough to carry on the family name; perhaps only one is needed for the parent to be recognized as an adult and to provide a sense of fulfillment.

When couples understand the magnitude of the costs connected with children and have other ways to provide for their own future, smaller families should become a logical and a desired consequence. □

Family Size and Child Development

Denise F. Polit, Ph.D.
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For decades, there has been a multidisciplinary interest in the effects of family size on children's development and on their overall life outcomes. While the theoretical perspectives of scholars from various disciplines have often diverged, there has nevertheless been a persistent underlying belief: growing up with one or two versus, say, seven or eight siblings *ought* to affect children's interactions with the outside world, their views of themselves, and the overall socialization process.

This belief has generated hundreds of studies on the consequences of being raised with few or many siblings, and, not surprisingly, family size has been found to correlate with a wide range of developmental outcomes. **In general, the evidence indicates that children from small families tend to accrue advantages in many developmental areas, while children from larger families are, as a group, relatively disadvantaged.**

Of course, one must be careful when drawing conclusions from correlational research. Couples who have large families tend, in industrialized countries at least, to be poorer and less well-educated than couples who have fewer children. Therefore, as some critics argue, developmental differences in the offspring could reflect social class differences of the parents. Nevertheless, there is growing evidence that even when the social class of families is accounted for, children from smaller families fare better on many measures of development than those from large families.

One of the best-documented research findings is that children from small families perform better on tests of intellectual ability than those from large families. The inverse

relationship between family size and aptitude has withstood cross-cultural tests, particularly in industrialized nations such as the United States, England, Scotland, Ireland, France, Israel, Australia and Canada. Furthermore, family size has been found to be inversely related to a wide variety of indicators of intellectual performance, including nonverbal tests of ability, individual IQ tests, vocabulary and reading comprehension tests, mathematics achievement tests, and tests of learning readiness. The relationship tends to be modest—certainly there are other, more powerful determinants of ability than family size. Nevertheless, the relationship is persistent and seems to hold up across social class groups (though there is some evidence that the effects are strongest among the most economically disadvantaged).

Family Size and Intellectual Development

In recent years, efforts to understand *why* family size should affect intellectual performance have intensified. Although a variety of explanations have been offered, including theories of economic causation, physiological differences in successive birth orders, and demographic changes, the explanation referred to as the "confluence model" has attracted the most interest and controversy. According to this model, a child's intellectual development is a function of the intellectual environment provided by the family. That environment is conceptualized as the average of absolute intelligence of all members of the family, including that of the child. Absolute intelligence refers to the level of intellectual functioning uncorrected for age. Thus, a child is born with an absolute intelligence of zero. The arrival of each additional child has the effect of lowering the family's intellectual environment. Therefore, children from larger families—especially if the births are closely spaced—grow up in a less enriched environment and tend to perform less well on measures of ability.

A second component of the confluence model is necessary to explain a phenomenon that appeared in many of the large-scale data sets on intellience: namely, that "only" children do not perform as well as might be expected, given the generally linear decline in test scores with increasing numbers of siblings. In fact, only children tend to score at about the same level as first-borns in four-child families. According to the confluence model, the only-child discontinuity results from the absence of an opportunity to tutor younger siblings. Only children and other last-borns are presumed to be handicapped cognitively by their inability to review and organize materials in the course of performing a teaching function with siblings.

Like any other ground-breaking conceptualization, the confluence model has generated considerable debate and many research applications. Various aspects of the model have been challenged, on both conceptual and empirical

There is growing evidence that even when the social class of families is accounted for, children from small families perform better on tests of intellectual

grounds. The research to date has neither put the theory to rest nor provided incontrovertible evidence of its validity. However, a true test of the model, using longitudinal data from all members of a sample of families, has not yet been performed.

Given the strength of the evidence indicating that children from small families perform better intellectually than children from large families, one would expect that children with few siblings do better in school and, ultimately, have more occupational successes than those with many siblings. In fact, this appears to be the case. Children from small families attain more years of schooling and hold more prestigious jobs than their peers from larger families, even when social class and family income are controlled.

Interestingly, these advantages appear to hold even when intelligence is accounted for. In other words, family size exerts an effect on educational and occupational achievement over and above its effect on ability. One possible explanation for this is that family size has a negative effect on achievement motivation. There are some studies that support this interpretation. It should also be noted that only children, who as a group do less well on tests of ability than other first-borns from small families, "make up" for this intellectual deficit when it comes to indicators of achievement. Only children tend to achieve about the same levels of schooling and occupational prestige as those who grew up with one sibling.

Other Aspects of Development

Other aspects of children's development in relation to family size have been less extensively studied, and the findings are, therefore, more tentative. With respect to children's personality, the evidence suggests that family size effects are rather small. Children from smaller families appear to have somewhat higher self-esteem and to be more assertive, but it is unclear to what extent these effects may be influenced by intelligence.

One interesting aspect of the research on personality is that it has not provided much evidence in support of the stereotype that only children are dependent, selfish, immature and maladjusted. If anything, researchers have found that only children have a number of positive personality traits, including emotional maturity and self-sufficiency, although there is some indication that they are less gregarious than children with siblings. The earlier evidence that only children are somewhat more neurotic and susceptible to mental illness has not stood up to recent, more rigorous tests. There is still some indication that children from large families are more prone to engage in antisocial behavior such as delinquency and criminality, but the data on this point should be considered suggestive rather than definitive.

Finally, there are some fairly solid and consistent findings with respect to the effect of family size on physical development and health. Based on several large-scale

ability and do better in school than those from large families. They also are taller, weigh more, and are more likely to survive past infancy.

studies in a number of countries, it appears that children from small families are taller, weigh more, mature faster sexually, and are more likely to survive past infancy than those from larger families. For the most part, these family size differences are maintained across various social classes.

A multidisciplinary explanation for the findings on family size suggests that, as family size increases, family resources become "diluted" and the result is the various developmental deficits noted by researchers. "Resources" in this case refers not only to family income, but also to such socio-psychological factors as parental attention and encouragement and the overall family environment. According to the dilution model, as these resources are divided among more family members, the result is the lowering of the "quality" of each child's developmental context. Recent studies on the costs of raising children in modern industrial societies are clearly consistent with the view that children are a major drain on a family's financial resources. Research on the effects of children on parents' health suggests that having a large number of children puts a strain on the parents' physical and psychological resources as well.

Making Responsible Decisions

In summary, there is fairly substantial documentation indicating that children from small families have a better developmental prognosis than those with many siblings. The differences are not generally large, but in some areas they are so persistent, even when other background factors are taken into account, that it becomes difficult to challenge their validity.

Unlike other factors that contribute to a child's development (such as family income and parental education), family size is amenable to control. Parents can make decisions about how many children to have more easily than they can, as adults, reshape their educational background. And policymakers can promote small families—through education, availability of low-cost family planning services, tax incentives and other measures—more easily than they can change social class structure.

The effects of family size on children's development are not of so great a magnitude that they are likely to deter individual parents from having the number of children they desire. But in the aggregate, these effects could have substantial impact on the quality of a nation's citizenry. It seems reasonable to encourage both parents and policymakers to think seriously about the consequences of family size and to make responsible decisions that can affect the quality of life for individuals, families and society. Ultimately, children's development affects a nation's development. □

Sex Preference and its Effect on Family Size and Child Welfare

Nancy E. Williamson, Ph.D.
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In many parts of the world, sex discrimination begins before birth. Parents desperately want a first-born boy, a son after a string of daughters or a boy as an only child. Many cultures have myths about how parents can increase their chances of having a boy. During the pregnancy, folk predictions are made about the sex of the coming child.

Only recently has a scientific method of determining sex before birth been available. This test, amniocentesis, involves examining the chromosomes in the amniotic fluid. Up to now, little advantage has been taken of this knowledge, since amniocentesis is still very uncommon around the world and most doctors would object to its being used for sex selection. However, recent news reports assert that in India female fetuses are being aborted; the same has been rumored for China.

Although now rare, sex selection may become more widespread, especially as the technology of sex detection improves. Today, an abortion for the purpose of sex selection must be performed in the second trimester of pregnancy because the test can be done only after the third or fourth month of pregnancy, when there is a sufficient amount of amniotic fluid. A technology which allows very early sex detection could, when combined with early menstrual regulation, have very widespread ramifications, especially since the preference for sons is so widespread.

Son preference is common throughout the world and is unusually strong in Arab countries and in South Asia. It is fairly mild in Latin America and Southeast Asia (for example in Indonesia, Malaysia and the Philippines). Sex preference has not become a public issue in Africa where

fertility is still so high; when families include seven or eight children, it is very likely that parents will have several of each sex. Also, modern family planning methods are not yet available to many African couples. Only when family size ideals are declining and parents have the ability to control their fertility does sex preference become a critical factor affecting fertility.

Policymakers in countries such as Bangladesh, China, India, Pakistan, South Korea and Taiwan have recently become concerned about sex preference, since their goal is to reduce their countries' population growth rates. The leaders of most Arab countries, where son preference is also very strong, are not yet concerned because reducing population growth is not as high a priority.

The most poignant case is that of China, which is trying to popularize the concept of the one-child family. After decades of vacillation in population policy, China has finally realized that it must seriously address the population issue. Despite the country's relatively low birthrate, the absolute numbers added to its population each year (about 14 million) represent a serious problem. At a time when most developing countries have not yet popularized the two-child family, China is trying to persuade couples to pledge to have only one child, regardless of its sex. In rural China especially, this is a radical idea. Sons have been the backbone of the rural family: they have provided labor and protection for the family, have carried on the family name, and have performed religious rituals. Parents have expected to live with their eldest son in their old age and to be assured of social security. The parents of an only child have no assurance that when that child marries, they will have a place to live. When only children marry each other, unless both sets of parents live with the young couple (which is rather unlikely), one set of parents will need to rely on their commune or on their own resources. Some communes can assure their older members of support, but less prosperous ones cannot.

Already in China, there have been some rumors of female infanticide and wife abuse in cases where the only child has been a daughter. These remain at the anecdotal level, but the country's 1982 census figures may provide documentation if they show an unusually high ratio of boys to girls among young children.

Among countries with son preference, China is unusual in that the government has seriously tried to undermine the basis for son preference. It has encouraged families with an only daughter to adopt a son-in-law and have him take the family name. It has tried to equalize women's position in marriage and the economy, and has discouraged ancestor-worship and traditional religion. New family planning posters show only one girl, and family planning workers put pressure on grandparents and others to modernize their views.

Policymakers in other countries, such as South Korea, have been concerned about son preference, but they assume that it will diminish with modernization. As couples move to the city, gain education, engage in modern occupations and plan to rely on their own savings in old age, the obsession for sons is likely to decline. In still other countries, such as India and Bangladesh, policymakers have not directly dealt with the problem. In the coming years, they may need to do so.

Discrimination against girls in education deprives both them and their societies of women's potential contribution to development.

Only in this century have scientists known that the male of our species determines the sex of the child (according to which of his sperm penetrates the woman's egg), and this fact has been slow to reach the world's masses. Women are routinely "blamed" and often abandoned for not producing sons. Sometimes sex determination is perceived as the outcome of a struggle between spouses, so that the wife in a family with daughters is considered to have the dominant personality. This belief may even coexist with the traditional view that the man plants his seed and the woman is merely the soil and thus has little to do with the characteristics of the child.

Effect on Fertility

Does sex preference actually affect family size? Family planning workers, in most Asian countries at least, assume it does, although demographers debate its effect. One

Many assume that a personal and cultural preference for sons contributes to higher birthrates, but demographers still debate the issue.

cross-cultural study including data from Bangladesh, India and Morocco found that families starting out with a string of sons were as likely to have more children as those families beginning with a string of daughters. The author did not deny that son preference existed, but asserted that it may not operate in a simple fashion. However, few of the respondents in this study had access to family planning. For sex preference to have a clear effect on family size, couples must have good control over their fertility once they have achieved their ideal sex composition. Couples must also want small- or moderate-sized families. If they want large families, as did the couples in this study, they usually do not need to worry about sex composition.

There is a further complication. For families in India, for example, a couple having an early string of daughters may stop childbearing because they fear the economic consequences of having daughters. The daughters they already have will require expensive dowries.

For son preference to lead a couple to have more children, the couple must also believe that there is a reasonable chance of having a son. Suppose two families had three daughters each. Both had a strong preference for sons. The first set of parents, assuming that they were just unlucky and were doomed to have more daughters, might stop childbearing, while the second set of parents might assume that is was *their turn* for a son and might continue childbearing. In short, sex preference can be a powerful motivation but it is not necessarily expressed unambiguously in ultimate family size.

Sex preference (for example, for a child of each sex) could also stop some couples from having more children. If parents in the United States have one child of each sex, they may feel there is no socially acceptable reason for going on. Friends or neighbors might say, "But why did you have a third when you already have a boy and girl?"

When one thinks of sex preference and excess fertility, one recalls families who have produced many children of the same sex and who have continued childbearing in order to get a child of the other sex. However, from a demographic point of view, such families are fairly rare. The most significant demographic effect is probably from couples who want small or moderate-sized families but also want at least one or two boys or at least one child of each sex.

In the Western world, where family size is small and the cost of raising children is high, many parents are now stopping at two children, regardless of sex. Despite possible disappointment, they recognize that they cannot adequately provide for more children.

Does anyone prefer daughters? Universally, women are less likely than men to prefer sons, although sometimes women want a son just to please their husbands. In Latin America and the Philippines, there is a tendency for women to prefer girls. The same is probably true of women with a feminist orientation in some developed countries, although there has been little research on this. There are also five very small societies studied by anthropologists where girls have been preferred.

Even though it is encouraging that in some places daughters are valued, the reasons for daughter preference are often rather traditional. Daughters may be preferred because they help with housework or help care for youn-

ger children. They may also be preferred for short-term companionship and presumed personality traits ("sugar and spice and everything nice"). Boys, on the other hand, are preferred for longer-term benefits, such as the family's fortune and perpetuation of the family name. The small societies preferring daughters were matrilineal and matrilocal. Women were economically productive and were considered a form of wealth, just as cattle might be in other societies.

Social scientists disagree on how sex preference should be measured. One can ask people about their ideal numbers of boys and girls or, if a woman is pregnant, about her hope for the sex of her next child. One can ask respondents to rank different size and sex compositions of hypothetical families. An interviewer can show pictures of girls and boys or pink and blue dolls and ask people their preferences. Or one can ask about people's retrospective feelings about having had girls or boys.

Alternatively, sex preference can be inferred from behavior. For example, it can be shown that until recent years, American families with one child of each sex were less likely to have another child than families with either two girls or two boys. This indicated, by inference, a preference for the heterogeneous-sex family. There are other behavioral indicators as well. Many societies have traditionally practiced female infanticide, and the practice probably still exists in some countries. On a milder level, a boy's birth may be celebrated and a girl's birth, ignored.

After the children are born, it is not uncommon for boys to receive better care. This is reflected in the unusually high mortality rate for female children in South Asia, including Bangladesh, India, Nepal and Pakistan. Surprisingly, the exact causes for this excess female mortality are not known (are boys breastfed longer or fed more? are they given better parental care or quicker medical attention?). Much more research is needed on the causes of this mortality differential.

Changing Attitudes

How can attitudes about sex preference be altered? China is attempting to reorganize society and reform the patriarchal family. It remains to be seen how well this radical and controversial approach will succeed, but the seriousness of the attempt is impressive. Another approach is to emphasize economic development in the hope that both fertility and sex preference will naturally diminish. The problem with this approach is that fostering economic growth in today's economically troubled world is extremely difficult, and some countries are in danger of going backward rather than forward. Son preference can also be discouraged through family planning programs; in China, Hong Kong and Singapore couples are actively encouraged to stop childbearing after one or two children regardless of sex.

Another approach has been to simply ignore the problem. The advantage of this approach is that the family planning program then does not incur the animosity of traditionalists by directly attacking the institution of son preference. A disadvantage is that it makes the job more difficult for family planning workers. If they try to argue against couples having more children in order to have sons, they have little support to effectively counter the views of older people and traditional leaders.

Sex preference may determine the quality and quantity of parental care, particularly expenditures on health care for children.

Sex preference can mean that a child is disadvantaged before it is even born. In extreme cases, sex preference may lead to selective abortion or infanticide; more often, it involves child neglect. For the child of the preferred sex, however, it means extra advantages, opportunities and privileges. Sex preference is the result of social organization, family structure, economic activities, religious beliefs and tradition. In many parts of the world, the "son barrier" remains a serious obstacle to lowered fertility. □

Consequences of Early Childbearing

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Although adolescent fertility has received little attention from family planning professionals in most developing countries, the incidence of births to very young women—both married and unmarried—is growing, and the trend appears to be universal. Each year, approximately 13 million children—one of every ten children—are born to females who themselves are little more than children. The percentage of live births to mothers under the age of 20 varies greatly among countries, ranging from 20 percent in some African and Caribbean countries, to 10 to 15 percent in much of Latin America, 5 to 10 percent in Asia, and 1 percent in Japan. The problem is as acute in many industrialized countries as in the developing world.

The reasons for increased out-of-wedlock adolescent pregnancy are diverse and complex. In much of the world, better childhood health and nutrition have resulted in earlier sexual maturity. Many of today's youth are physically capable of reproduction at a younger age than their parents were. At the same time, the age of marriage is increasing. Unmarried young people now spend several years together in school and in the labor force, exposed to the risk of unwanted, premarital pregnancy for more years than previous generations.

In developing countries an additional factor—rapid urbanization—acts to diminish the traditional mechanisms which deter premarital sexual activity. Traditional family structures are weakened as individual family members attempt to adapt to the strains of continually accelerating urbanization. Restrictive community and social controls are also rendered less effective as urban lifestyles permit teenagers ever-increasing mobility and personal freedom. Cultural restrictions such as chaperonage and sexual segregation for young people, for example, may no longer be practical or even possible. But these newly emancipated young people are particularly vulnerable to urban dangers and disadvantages: high unemployment, housing shortages, overcrowding, drug and alcohol abuse, violence, etc. And their mobility and freedom, which give them increased opportunity for sexual contacts, also render them more vulnerable to sexual exploitation.

For young women, the possibility of pregnancy is an additional threat. Early childbirth, regardless of marital status, is especially dangerous for adolescents and their infants. Moreover, the consequences of adolescent childbearing are life-long and affect the entire community as well as the individuals involved.

The first concern for the pregnant adolescent is that of health. The risks of death and disease are far greater for pregnant women under the age of 20 than for those between 20 and 35 (the risk increases again after the age of 35). The younger the woman, the greater the risk of bleeding during the first and/or third trimester of pregnancy, toxemia, hemorrhage, prolonged and difficult labor, severe anemia, disability and death.

Lifelong Disadvantages

The young mother may suffer life-long social and economic problems as well. If she is ostracized for having borne a child out of wedlock, she may have little choice but to turn to prostitution to earn enough money to care for herself and her child, and this may in turn lead to additional pregnancies. The large number of women in this situation ensures adverse social and financial consequences for the entire community. In many industrialized countries the growing number of teenage births has resulted in serious public welfare problems.

If the young mother is fortunate enough to be cared for by her family or by the father of her child, her life will nonetheless reflect the disadvantages of her early pregnancy. Her education will have been interrupted, perhaps permanently, her career opportunities will be severely limited and, if the father of her child does not marry her, her opportunities for marriage will also be limited. Her future may be one of frequent unemployment, low social status, marital instability, a greater number of children than she can adequately care for and a level of poverty worse than she might otherwise have experienced.

Her child will, of course, suffer these disadvantages with her. Like her, the infant's most immediate problem will be that of health: babies born to adolescent mothers experience a higher incidence of prematurity, low birthweight and nutritional deficiency than babies born to women in their twenties. The Pan American Health Orga-

nization has found that in Latin America, low birthweight is the most important cause of neonatal and infant death. Low birthweight in children of very young mothers is also associated with birth injuries, serious childhood illnesses, and mental and physical handicaps such as epilepsy, retardation, blindness and deafness.

Although out-of-wedlock births are common and socially acceptable in many areas, out-of-wedlock children in most countries face social and legal discrimination and economic hardship. In some areas, out-of-wedlock children may be cared for by the extended family or community. However, in urban areas, adolescent mothers may resort to prostitution, and child neglect and abandonment are common.

Early childbearing is also associated with a high number of pregnancies, large completed family size and short birth intervals. The subsequent children of young mothers suffer additionally from the hazards of close spacing, as the mother's health and nutritional status does not have time to recover from the previous pregnancy. Fetal death rates increase dramatically after the mother's second and third pregnancies. In England and Wales, where the infant death rate has decreased, the rate still rises sharply among high birth order children. This holds true at all socio-economic levels.

Access to Contraception Limited

Those adolescents who are, or could be, motivated to practice contraception are hindered by limited access to family planning information and services. In both developed and developing countries, social and cultural pressures and legal restrictions make it difficult for sexually active young people to avoid pregnancy.

In developing countries, family planning programs are oriented toward older couples with children who wish to space or avoid further births. They may make information or services available to young married couples, but most exclude unmarried adolescents altogether. In addition to their emphasis on couples who have approached or completed their desired family size, many programs operate under national laws or local customs that do not permit minors to give consent for their own medical care, regardless of their marital status. In this case, contraceptives may not be prescribed for young women, or young women may be required to obtain their husbands' or parents' consent.

In developed countries, the trend among family planning programs has been to allow adolescents greater access to contraceptive and abortion services. French law, for example, eliminated parental consent requirements for contraception in 1974, and the United States did so two years later. Although there have been several initiatives in this direction in developing countries, law and custom remain restrictive.

Unwanted pregnancies resulting from lack of contraceptive use have led to increasing numbers of abortions among young women. In much of the world, despite the fact that young and/or unmarried women are often denied access to legal abortion services (or, as with contraceptives, are required to obtain their husbands' or parents' permission), both the number and proportion of abortions performed for young women has been increasing. Abortion is often more traumatic physically for adolescents than for older women, since it usually takes them longer to recognize and admit the symptoms of pregnancy and then to seek help. Whether out of ignorance or fear, adolescents have a tendency to request abortion services later in pregnancy than older women, thus requiring more complicated and potentially dangerous abortion procedures.

It is estimated that by the turn of the century there will be approximately one billion adolescents in the developing world—people who are physically old enough to reproduce themselves but far too young to be the responsible, healthy parents of healthy children. Since the effects of adolescent childbearing are felt by society as well as by the families directly affected, governments must become involved in the issues surrounding this complex and sensitive area. Both custom and law must change to reflect the needs of young people.

In addition, family planning programs must expand their orientation to take into account young people who wish to postpone first births. This will require not only increased services and counseling but an education program as well, so that adolescents can be made aware that family planning help is available to them. The savings in lives and health—of both mothers and their children—can be tremendous. □

In Memoriam

The Directors and staff of the Population Crisis Committee are deeply saddened by the loss of Ambassador James W. Riddleberger and Dr. J. George Harrar, each of whom served as Trustee and Honorary Chairman for many years.

James W. Riddleberger
1904-1982

Ambassador Riddleberger, who always quickly became "Jimmy" to new friends, combined unusual intelligence and energy with the friendly and sympathetic attitude which made him so effective in the many important international assignments he undertook during a long and distinguished career.

An authority on central Europe, Jimmy Riddleberger was chief of the Central European Affairs Division of the State Department during World War II, and later during the "Cold War" guided the development and administration of the Marshall plan. In succeeding years he served as the U.S. Ambassador to Yugoslavia and Greece, as Director of the International Cooperation Administration (the predecessor of the Agency for International Development), as Chairman of the Development Assistance Committee of the Organization for Economic Cooperation and Development, and as Ambassador to Austria. In 1968 he retired as a Career Ambassador, the highest rank in the U.S. Foreign Service.

The following year General Draper persuaded Jimmy Riddleberger to succeed him as National Chairman of the Population Crisis Committee, and he served as the International Planned Parenthood Federation's Special Representative in Washington, D.C. as well. He subsequently became PCC's Honorary Chairman and in that capacity worked actively on behalf of international population causes until his death in October, 1982.

Jimmy Riddleberger's ready smile and quiet wisdom will long be missed by his colleagues and his many friends.

J. George Harrar
1906-1982

Dr. Harrar was a scientist, humanitarian and administrator of world renown. He felt deeply about the earth's poor, hungry and illiterate and devoted his life to alleviation of their plight. His research and leadership in the expansion of corn and wheat yields in Mexico in the 1940's became a model for similar agricultural programs elsewhere. During the 1960's, as President of the Rockefeller Foundation, he organized the Foundation's key support of the Green Revolution, which owed much to his earlier crop yields research.

A giant of human sensibility and achievement, Dr. Harrar shared with General Draper an acute awareness of the crippling impact of overpopulation on all efforts for human betterment. He joined the Population Crisis Committee's Board of Directors in 1972 and became an Honorary Chairman the following year. His dedication to the issues of population and development remained strong until his death in April, 1982, and he is greatly missed by all who knew him.

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